PIOB-01582

MULTI-CD CONTROL FM/MW/LW TUNER DECK AMPLIFIER

AMPLIFICATEUR PLATINE DE SYNTONISATION FM/PO/GO DE COMMANDE MULTI-CD

OWNER'S MANUAL
MODE D'EMPLOI

Thank you for purchasing this PIONEER product. Before attempting operation, be sure to read this manual.

KEH-M9500RDS

PIONEER®

The Art of Entertainment

KEH-M9500RDS
KEH-M8500RDS
KEH-M8000RDS

MC-Service

ENGLISH

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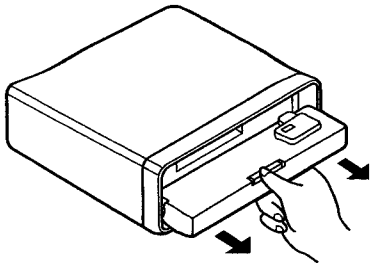
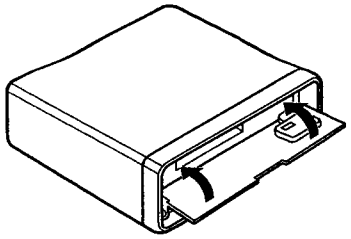


Fig. 1



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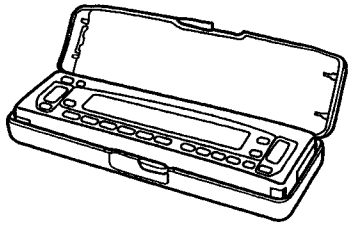

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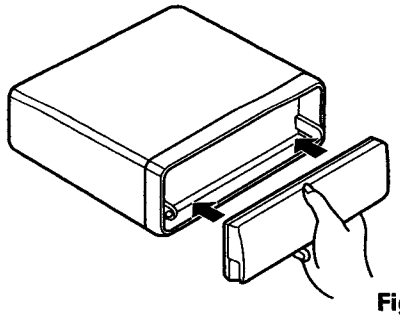

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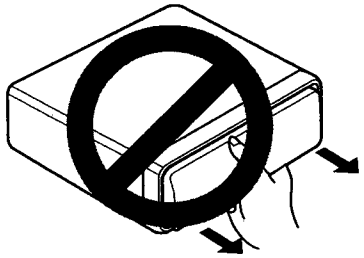

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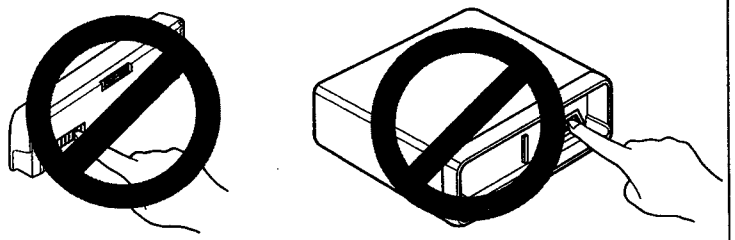

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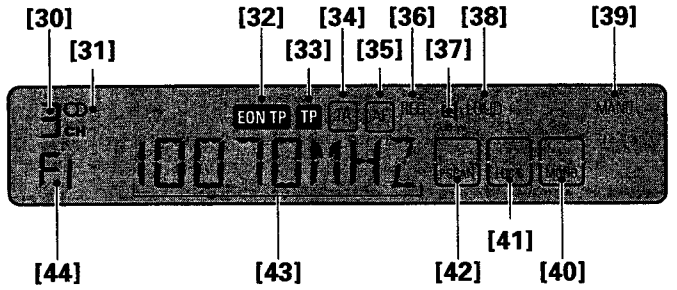

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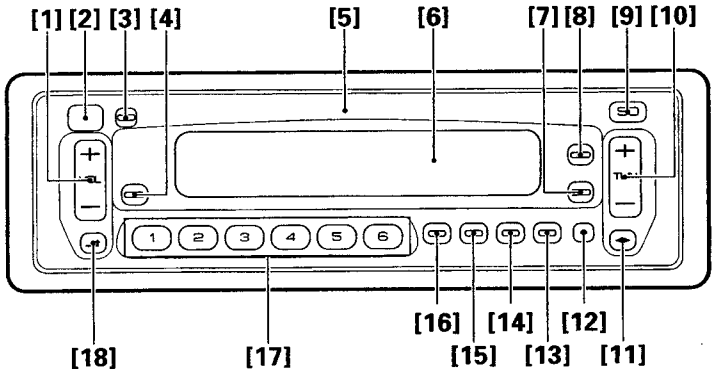


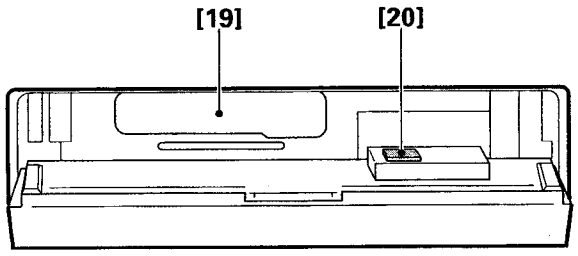
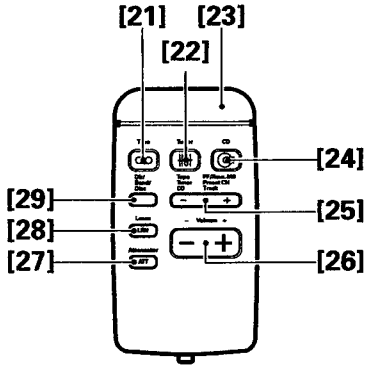


Fig. 7



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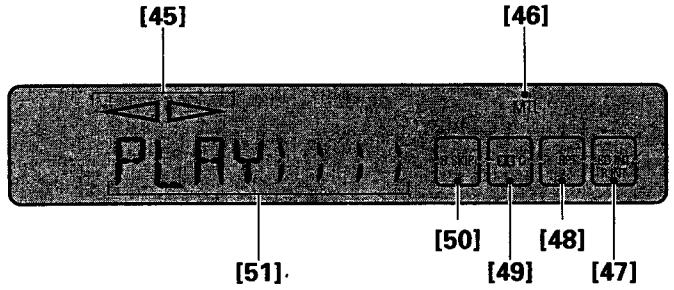


Fig 10

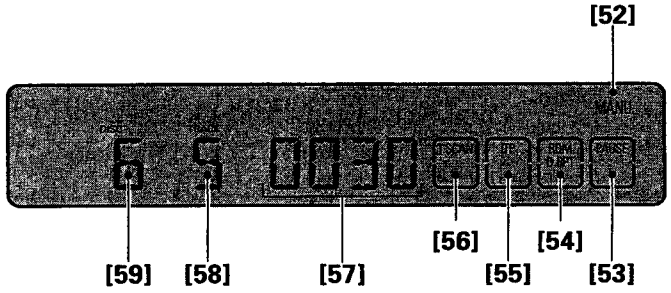


Fig. 11

Composition of manual

This manual applies to the KEH-M9500RDS, KEH-M8500RDS and KEH-M8000RDS.
However, the illustrations show the KEH-M9500RDS. The KEH-M8500RDS and KEH-M8000RDS have following features which differ to the KEH-M9500RDS.

KEH-M8500RDS

- This Unit does not come with a remote controller. For remote control, please purchase the CD-R52, which is sold separately.
- This unit has no Dolby C NR function.
- This unit has no amp input terminal. (When this unit is used connected to a graphic equalizer, this unit's internal amp can not be used.)

KEH-M8000RDS

- This unit does not come with a remote controller and can not be operated with any remote controller.
- This unit has no Dolby C NR function.
- Some of the fader functions are different.
- This unit has no amp input terminal. (When this unit is used connected to a graphic equalizer, this unit's internal amp can not be used.)
- This unit has no sub-woofer function.
- This unit has no cellular telephone muting function.
- This unit has no clock function.

Precautions

- The "Pioneer CarStereo Pass" that comes with this unit can only be used within Germany.
- *Never remove the top case of the unit to attempt check or repairs. If operation of the unit is abnormal, contact your dealer or the nearest Pioneer Service Station.*
- *If the car's battery is disconnected for any reason, the preset memory will be erased and must be reprogrammed after reconnection of the battery.*

In case of trouble

When the unit does not operate properly, contact your dealer or the nearest authorized PIONEER Service Station.

Using the Removable Front Panel

Parts Identification (Fig. 7)

[3] Open button
[5] Front panel
[10] Buzzer ON/OFF

The front panel of this unit can be removed to prevent theft. Also, to prevent forgetting to remove the front panel, 5 seconds after the ignition is turned off, if the front panel is still attached, a buzzer will sound for a few seconds.
If you wish to cancel the sound of the buzzer, please do as follows.
Keep the minus side (–) of button [10] depressed and turn the vehicle's ignition key from OFF to ON. By repeating this procedure, the sound of the buzzer will be restored.

Detaching the Front Panel

1. Press button [3] to open the front panel.
2. While holding down the lock button, pull the front panel toward you. (Fig. 1)
- *Take care not to put pressure on the display or drop the front panel.*
3. Close the inner lid. (Fig. 2)
- *Always keep the inner lid closed while the front panel is out, otherwise dirt or dust may get into from the cassette slot, causing malfunctions.*
4. Enclose for safekeeping the front panel that is removed in the supplied protective case. (Fig. 3)

Replacing the Front Panel

1. Make sure the inner lid is closed.
2. Push the front panel into the main body. (Fig. 4)
- *When replacing the front panel, do not put pressure on the display or control buttons.*

Precautions

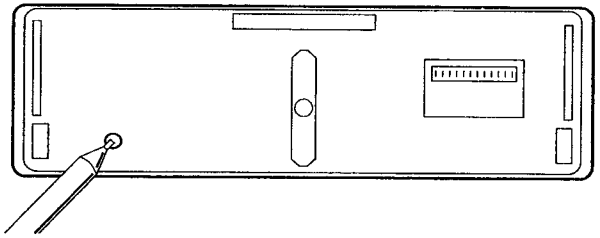
- *Do not force the front panel to remove it. (Fig. 5)*
- *Do not touch the contacts on the front panel or on the unit body, since this may result in poor electrical contact. If dirt or other foreign substances get on the contacts, wipe them with a clean, dry cloth. (Fig. 6)*

Precautions When Handling the Front Panel

- *Do not leave the front panel in any area exposed to high temperatures or direct sunlight.*
- *Do not drop the front panel or otherwise subject it to strong impact.*
- *Do not allow such volatile agents as benzene, thinner, or insecticides to come into contact with the surface of the front panel.*
- *Never try to disassemble the front panel.*

Using the Clear Button

- The Clear button can be found on the main unit by removing the front panel. Observing the precautions above, remove the front panel and close the inner lid.



When the initial installation operation is complete, press the Clear button with something with a tip small enough to reach it. If any symptom of trouble occurs, for example "the power does not come on", "the operation buttons do not work", or "the display is not normal", it may be that this unit's microcomputer has malfunctioned due to noise. In this case, reset the microcomputer by pressing the Clear button with something with a tip small enough to reach it.

Adjusting Volume and Tone

Parts Identification (Fig. 7)

[1] Volume/Audio adjustment
[3] Open
[4] Loudness/Illumination switch (KEH-M9500RDS, KEH-M8500RDS)
[4] Loudness (KEH-M8000RDS)
[5] Front panel
[6] Display
[9] Source selector
[10] Frequency selector
[12] Illumination switch (KEH-M8000RDS)
[18] Shift
[19] Cassette slot
[20] Eject

(Fig. 9)

[37] Sub-woofer (KEH-M9500RDS, KEH-M8500RDS)
[38] Loudness

Switching Power On

Tuner

Press button [9] to switch the tuner power on. Press button [9] again to switch the power off.

Tape

Press button [3] to open the front panel, and load a cassette in through cassette slot [19]. The cassette will play. To eject the cassette, press button [3] to open the front panel and press button [20].

Source Selector

When a cassette is loaded and button [9] is pressed, the source shifts in the order tape → tuner → power off. If this unit is combined with a multi-play CD player sold separately such as CDX-M30, the source shifts in the order multi-play CD player → tape → tuner → power off.

Note:

- None of the operation buttons except button [20] work while the front panel is open. Use the control buttons after shutting the front panel.

Adjusting Audio

Press button [1] to adjust the volume. Each press of button [18] changes the display and the function of button [1] as follows:

(KEH-M9500RDS, KEH-M8500RDS)

Volume → Fader 1 → Fader 2 → Bass → Middle → Treble → Balance

(KEH-M8000RDS)

Volume → Fader → Bass → Middle → Treble → Balance

Adjusting Volume

Pressing the (+) side of button [1] increases the volume, while the (–) side decreases it.
(Display shows **"VOL00"** — **"VOL30"**.)

- *While driving, keep the volume low enough that you can hear sounds from outside the vehicle.*

Adjusting the Fader (KEH-M9500RDS, KEH-M8500RDS)

This unit has two faders: Fader 1 (displayed as **"FAD1"**) which adjusts this unit's built-in amp front output and rear output and Fader 2 (displayed as **"FAD2"**) which adjusts the built-in amp's overall output and the rear pre-out output.

- When combining this unit with a graphic equalizer, the fader adjustment is carried out on the graphic equalizer. For details on how to adjust Fader 1 and Fader 2 in this situation, see "Combining this unit with a graphic equalizer" in the next item. (KEH-M9500RDS)
- When the sub-woofer function is used, the Fader 2 function does not work. (See "Using the Sub-woofer" on the next item.)
- For details on Speakers [1] – [4] as mentioned in the explanation of Fader 1 and Fader 2, see the wiring diagram on the next item.

Fader 1
Pressing the (+) side of button [1] decreases the volume from Speaker [2] and pressing the (–) side decreases the volume from Speaker [1]. (Display shows **"FAD1 F9"** — **"FAD1 R9"**.)

Fader 2
Pressing the (+) side of button [1] decreases the volume from Speaker [4] and pressing the (–) side decreases the volume from Speaker [3]. (Display shows **"FAD2 F9"**— **"FAD2 R9"**.)

Notes:

- When either Speaker [1] or Speaker [2] is not connected, set Fader 1 to its center position, **"FAD1 0."** Adjust the Speaker [3] and Speaker [4] output with Fader 2.
- When Speaker [4] is not connected, set Fader 2 to its center position, **"FAD2 0"**. Adjust the Speaker [1] and Speaker [2] output with Fader 1.

Adjusting the Fader (KEH-M8000RDS)

Pressing the (+) side of button [1] decreases the volume from Speaker [2] and Speaker [4] and pressing the (–) side decreases the volume from Speaker [1]. (Display shows **"FAD F9"** — **"FAD R9"**.)

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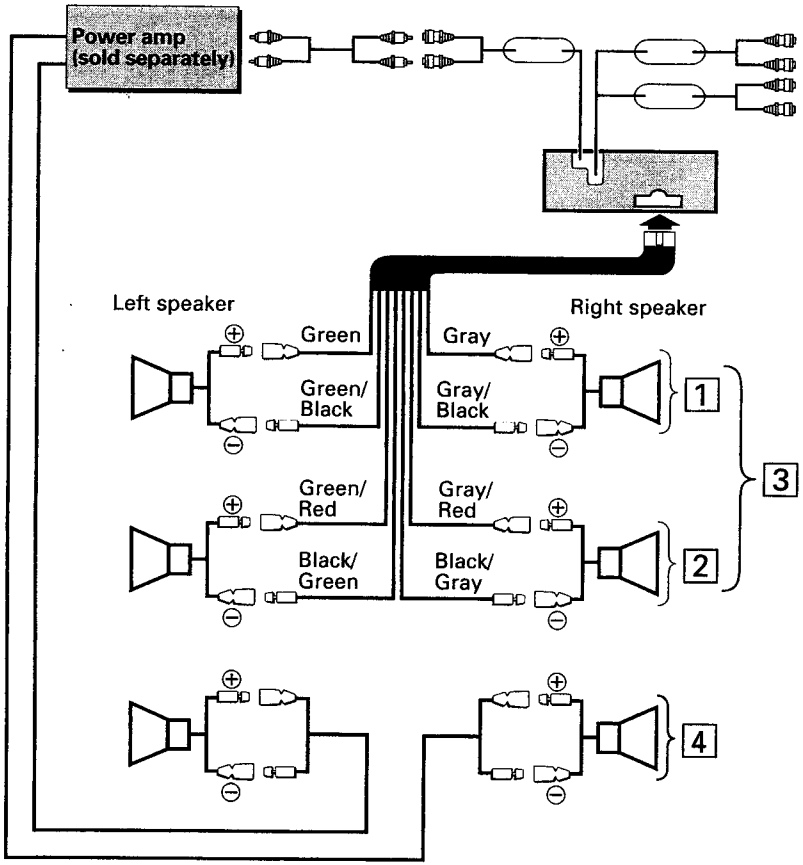
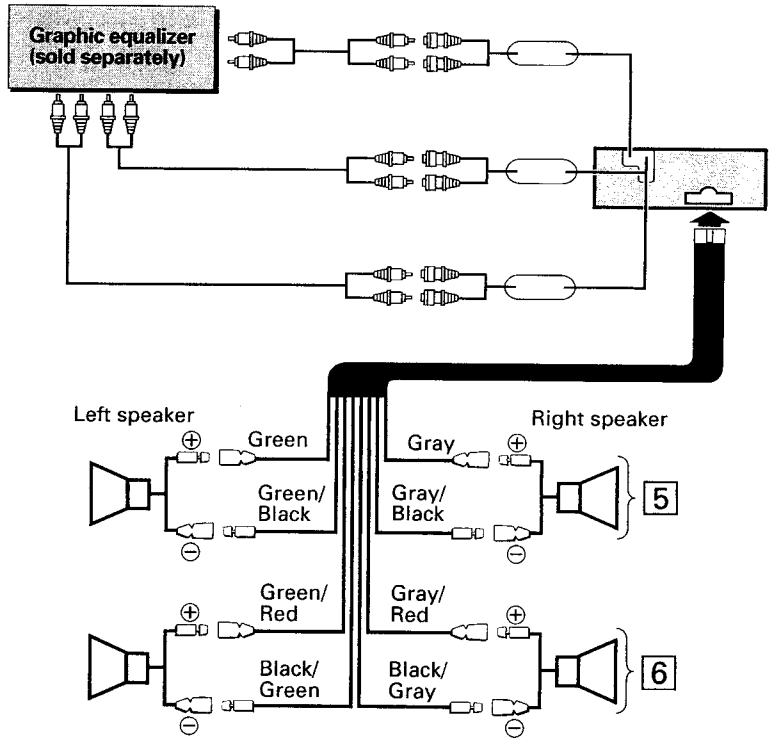


- For details on connecting this unit and a power amp, see the separate installation manual.

Combining this unit with a graphic equalizer (KEH-M9500RDS)

Set this unit's Fader 1 and Fader 2 to **"FAD1 0"** and **"FAD2 0"**. Adjust the output from Speaker [5] and Speaker [6] with the graphic equalizer, not with this unit.



- For details on connecting this unit and a graphic equalizer, see the separate installation manual.
- When you connect this unit with a graphic equalizer, you must switch the "MAIN IN" switch on the bottom of this unit. For details, see the separate installation manual.

Adjusting Bass
Pressing the (+) side of button [1] increases bass, while the (–) side decreases bass.
(Display shows "**BAS–6**" — "**BAS +6**".)

Adjusting Middle
Pressing the (+) side of button [1] increases middle, while the (–) side decreases middle.
(Display shows "**MID–6**" — "**MID+6**".)

Adjusting Treble
Pressing the (+) side of button [1] increases treble, while the (–) side decreases treble.
(Display shows "**TRE–6**" — "**TRE+6**".)

Adjusting Balance
Pressing (+) side of button [1] shifts the balance to the left speaker, while the (–) side shifts it to the right speaker.
(Display shows "**BAL L9**" — "**BAL R9**".)

- When you're adjusting fader, bass, middle, treble, or balance settings, the indicator will stop at the center setting. About 8 seconds after adjustment has been made, the display returns to its previous state.

Using the Sub-woofer
(KEH-M9500RDS, KEH-M8500RDS)
This unit's pre-out output terminals can also be used as sub-woofer output terminals. (For details on the wiring, see the separate installation manual.) When using these terminals as sub-woofer output terminals, carry out the following operations.

- When the sub-woofer function is used, the Fader 2 function does not work. When button [18] in the previous item is pressed, the display moves to the next step in the sequence: Volume → Fader 1 → Sub-woofer → Bass → Middle → Treble → Balance. (In other words, the Sub-woofer display replaces the Fader 2 display.)

Using the sub-woofer function
1. Press button [18] repeatedly to switch to the Fader 2 display ("**FAD2 F9**" — "**FAD2 R9**").
2. When you hold down button [18] for at least 2 seconds, "**SUB. W**" [37] lights up and the sub-woofer function comes on. The display switches to the sub-woofer display for about 8 seconds (displaying the frequency and output level "**80HZ 0**").
3. To end the sub-woofer function, press button [18] repeatedly to switch to the sub-woofer display. Holding down button [18] for at least 2 seconds while the sub-woofer is being displayed ends the sub-woofer function.

Frequency and output level adjustment
1. Press the button [18] repeatedly to switch to the sub-woofer display. (For about 8 seconds, the display shows the frequency and output level "**80HZ 0**").
2. While the sub-woofer display is shown, adjust the frequency and output level. Pressing the (+) or (–) side of button [10] raises or lowers the frequency. Pressing the (+) or (–) side of button [1] raises or lowers the output level. The frequency can be set to 50 Hz, 80 Hz, or 120 Hz. The output level can be set within the range from –6 to 6.

Using Source Level Adjuster
You may wish to adjust volume when you have changed the source to radio, tape, or CD or when you have changed the radio band from FM to MW/LW. You can do so on the basis of the volume of FM as follows:

1. Use the button [9] to change the source. (In case of radio, change the band to MW/LW.)
2. Hold down the button [18] for about 2 seconds, and the display will show you the volume of the source. (Display shows "**V–4**" — "**V+4**".)
3. Pressing the (+) side of button [1] raises the volume and pressing the (–) side lowers it. About 8 seconds after the completion of the adjustment, the display returns to whatever it was showing before the adjustment.

- No adjustment can be made when an FM station is tuned in.

Using the Loudness Function
Press button [4] and the "**LOUD**" [38] will appear on the display. This "loudness" function enhances both the high and low ranges of sound to give even more power to output even at low volumes.

Switching Illumination Colour
(KEH-M9500RDS, KEH-M8500RDS)
Pressing button [4] for more than 2 seconds causes the illumination colour to switch between green and amber.

(KEH-M8000RDS)
Pressing button [12] toggles the illumination colour between green and amber.

Regarding the Cellular Telephone Muting
(KEH-M9500RDS, KEH-M8500RDS)
When the audio mute terminal of a cellular telephone is connected to the cellular mute terminal of the unit, the following function becomes active.
When a phone call is received or made on the cellular telephone, the volume is automatically lowered by the unit, and "**CALL**" is shown on the display.
When a call is ended, the volume returns to the previous level and the previous display is shown again.

- When the volume is lowered by the operation of the cellular telephone muting function ("**CALL**" is shown on the display), the unit's shift Button [18] and the attenuator button of the remote controller unit are disabled.

ENGLISH

Using the Radio

Parts Identification

(Fig. 7)

[6] Display
[7] AF
[8] TA
[9] Source Selector
[10] Tuning/Local Seek Sensitivity/Seek, Manual
[11] Band
[14] FM Stereo/Mono,Display switch
[15] Local Station
[16] Preset Scan/Best Stations Memory (BSM)
[17] Preset

(Fig. 9)

[30] Preset Number
[31] FM Stereo
[32] EON
[33] TP
[34] TA
[35] AF
[36] REG
[39] Manual
[40] FM Mono
[41] Local Station
[42] Preset Scan
[43] Frequency
[44] Band

Listening to the Radio

- Electronic Tuner
  Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocations for Western Europe, Asia, the Middle and Near East, Africa, Australia and Oceania. Use in other areas may result in improper reception of AM.
  The RDS function does not work in regions with no RDS broadcast service.

1. Press button [9] to switch the radio power on.
Press button [9] to switch the tuner on and off. Operations will be different when the unit is combined with a separately available multi-play CD player (CDX-M30, etc.). For details on "Switching Power ON" refer to the relevant clause, on page 5.
2. Press button [11] to select a band.

F I→F II→F III→M/L
(FM1) (FM2) (FM3) (MW/LW)

Use Button [10] to switch between MW (531—1,602 kHz) and LW (153—281 kHz)
3. Use seek tuning to tune in a frequency.
Ensure that **"MANU"** [39] is not indicated on the display. (If so, turn it off by simultaneously pressing the (+) and the (–) sides of button [10].)
Press either the (+) side or the (–) side of button [10]. When the (+) side is pressed, the tuner will automatically receive high frequencies.
When the (–) side is pressed, it will automatically receive low frequencies.
4. Adjust volume and tone (see page 5).
5. Assign the tuned frequency to one of the buttons in Bank [17] (preset memory).
Press and hold down one of the button in Bank [17] for at least 2 seconds. The frequency is assigned to the selected button when the preset number [30] stops flashing on the display. Up to 18 FM stations (6 each for FM1, FM2 and FM3), and 6 MW/LW stations can be assigned to the preset memory buttons in Bank [17].
6. Once a frequency is assigned to a button in Bank [17], you just need to press that button to tune it in.
This also causes the number of the button pressed to appear at position [30] on the display.

BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to the buttons in Bank [17] , from strongest to weakest. It comes in handy when trying to find local stations while driving .
1. Press button [11] and select a band.
2. Hold down button [16]. After about 2 seconds, a "beep" will sound to signal that the BSM search has started. At this time, "**BSM**" will flash on the display.
3. The frequency display will return once BSM search is complete, and frequencies are assigned to buttons 1 through 6 in Bank [17].

- At the end of the BSM search, the displayed frequency is that assigned to button "1" of Bank [17].
- If there are fewer than six strong stations in the area, some of the buttons in Bank [17] will not be assigned frequencies, so they will retain any frequencies assigned to them previously.
- BSM search may take as long as 30 seconds in areas where there are few strong stations.
- You can cancel BSM search by pressing button [16] again.

Preset Scan Tuning

This function lets you automatically monitor the stations assigned to the preset buttons.
1. Press button [16]. The preset scan frame [42] lights up and the preset number [30] blinks. The broadcast stations stored with button [17] that are being received are called out one after another for 8 seconds each.
2. When you hear a station that you like, press button [16] again to cancel preset scan tuning and remain at that station.

Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations. The local setting also has four seek tuning sensitivity levels for FM and 2 levels for MW/LW to match local conditions.

Changing the Local Seek Sensitivity

1. Use button [11] to select a band.
2. Hold down the button [15] for more than 2 seconds, and the display will show you the current local seek sensitivity for about 5 seconds.(Example: LOC-2)
3. While the local seek sensitivity remains on the display, press the (+) side of button [10] to increase the sensitivity level, and the (–) side to decrease the level as shown below.
   FM : LOC-1 ⇄ LOC-2 ⇄ LOC-3 ⇄ LOC-4
   MW/LW: LOC-1 ⇄ LOC-2
   The LOC-4 setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations.

- The display of local seek sensitivity returns to the frequency when about 5 seconds have elapsed after the change of sensitivity.

Switching between Local and DX

Press button [15] to switch between Local and DX (distant) seek tuning. When the frame of local seek [41] is lit, seek tuning is performed with the local seek sensitivity. Otherwise, seek tuning is performed with the DX seek sensitivity.

Manual Tuning

Use manual tuning when stations are too weak to be picked up by seek tuning.

1. Turn on "**MANU**" [39] by simultaneously pressing the (+) side and the (–) side of button [10].
2. Each press of the (+) side of button [10] increases the frequency in 50 kHz steps in the FM band, 9 kHz in the MW band and 1 kHz in the LW band. Pressing the (–) side of button [10] decreases the frequency. Holding down either side of button [10] changes the frequency at high speed.

Switching between FM Stereo and Mono

Generally, it is best to allow the ARC (Automatic Reception Control) function to automatically set the optimum listening conditions. "◌" [31] turns on during stereo broadcast is in reception. When there is a large amount of noise, you can press button [14] for clearer mono reception (The frame of FM mono [40] turns on).

Using the RDS Function

What is RDS?

RDS (Radio Data System) according to a CENELEC EN50067 is a system for transmitting data signals from FM broadcast transmitter along with the normal sound program. These data signals, which are imperceptable to listeners, are intended to aid radio listeners in tuning their receivers to a desired station. RDS receivers can decode these data signals for display or control purposes.
RDS digital signal includes various data, such as PI, PS, AF, TP, TA and EON.

PI.....Program Identification Code
PS .....Program Service Name
AF .....List of Alternative Frequencies
TP.....Traffic Program Identification Code (Similar to SK signal of ARI system)
TA .....Traffic Announcement Code (Similar to DK signal of ARI system)
EON .....Enhanced Other Network Information Code.(In some countries. EON is not offered by broadcasters.)

RDS Function of this Unit

This unit has the following functions for making use of RDS data.

- PS, the name of the currently listened station is displayed.
- AF (Alternative Frequency) function. This enables the receiver to automatically retune to more suitable frequencies transmitting the same program.
- TP/TA, EON, user selectable reception of the traffic information service, offered by RDS.

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Network/Station Name Display

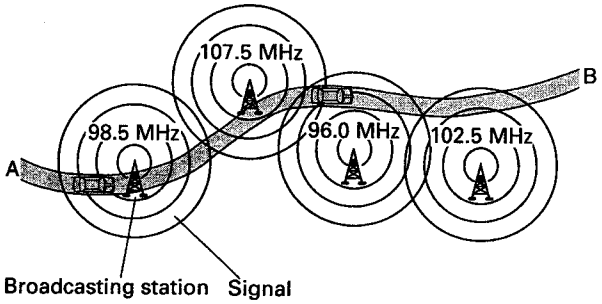
Switch the tuner on and choose one of the three FM bands.
When you tune into an RDS station with manual or seek tuning, the frequency display changes to the network/station name display after a few seconds by means of the PS code.

- The RDS functions of this unit use RDS codes transmitted along with FM broadcasts. RDS doesn't work on the MW or LW bands.
- The RDS functions may not work properly in areas where the RDS transmissions are at an experimental stage or where there are flaws in the broadcasting system.
- Hold down button [14] for more than 2 seconds to change the network/station name display to a frequency display. The frequency will be displayed while the button is being held down.

AF (Alternative Frequency) Function

This receiver retunes automatically to a more suitable transmitter, contained in the list of Alternative Frequencies (AF), to enable the motorist to keep listening to programs in the same network.

Example:
If a motorist travels as shown below, from point a A to point B, (and has selected AF function) then the receiver will automatically retune to a more suitable frequency transmitting the same program. This is shown by the automatic retuning from 98.5 MHz to 107.5 MHz to 96.0 MHz to 102.5 MHz.



Alternative Frequency Function

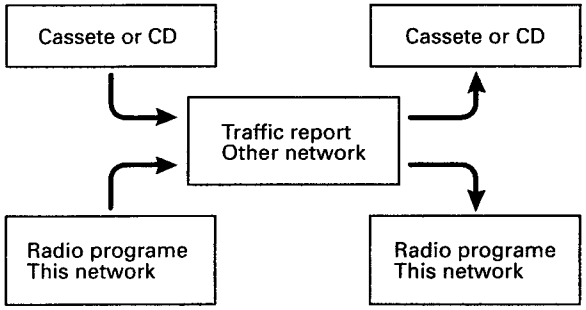
To activate the Alternative Frequency Function, press button [7], **"AF"** [35] will appear on the display. Once tuned to a RDS station, as long as you drive within an area served by the same network, the receiver will automatically retune to a more suitable station transmitting the same program, by utilizing the PI code and AF list data.

- **"PI SEEK"** will appear on the display, if the AF function has been selected, and a suitable AF station cannot be found. In this case, the receiver will mute the radio sound and search the frequency band, in order to find a station with the same PI code. The receiver will return to the original frequency if a suitable PI code can not be found.
- **The AF function will not work in the following cases:**
  — when the receiver is tuned to a non-RDS station.
  — when the RDS station does not transmit any AF list data.
  — when the receiver can not receive the AF list data for some reason.
  In all of these cases, if the tuned station's signal falls below a certain level, "AF" [35] will flash on the display to indicate the AF function is unable to function.
- If button [7] is pressed before selecting a preset RDS station in memory, the Alternative Frequency Function operates when the preset station is being recalled.
- During the day, some radio stations may broadcast regional programs which are different from those broadcasted by other stations within the same network. If the receiver is tuned in to such a regional program and you wish to continue listening to it, hold down button [7] for more than 2 seconds, to select the regional function. **"REG"** [36] will appear on the display.
  Using the AF Regional function, the receiver will tune automatically to those stations broadcasting the same regional program. However, there are cases where some stations do not contain the required AF list data for this function to work. (This is not a malfunction of the unit.)
  Hold down button [7] again for more than 2 seconds to cancel the regional function. **"REG"** [36] will go off.
- If the receiver is set to FM beforehand, and the main unit's cassette tape or the multi-play CD player is being listened to, pressing down button [7] will illuminate **"AF"** [35] and allow the AF function to work. However the radio sound will remain muted.

Traffic Information Reception

When a traffic information station (TP or SK station) is selected, "**TP**" [33] lights on the display, thus indicating traffic report can be received through this station. The "**EON TP**" [32] indicator will light on the display when a selected station (this network) is broadcasting EON information which cross-references at least one program service which carries traffic information, thus indicating traffic report can be received through another program service (other network) by using the EON function of this unit.
In both cases, by briefly pressing button TA [8], Traffic report waiting status will be entered. However, if you wish not to interrupt your radio program (eg: classical music program) by traffic report but wish to receive traffic report only from traffic information station by selecting it, the EON function of this unit can be set to OFF. Pressing button TA [8] for more than 2 seconds, changes the status of the EON function, EON-ON ⇄ EON-OFF.
This indication is shown on the display for approximately 5 seconds.
If only the "**EON TP**" [32] indicator is on but the EON function of this unit is OFF, it is not possible to receive traffic report through another program service. In this case, "**TA**" [34] (if traffic report waiting status is set to ON) will flash on the display to indicate this situation.

Traffic information reception by EON function.
When "**EON TP**" [32] and "**TA**" [34] light.



- The volume of the traffic report reception can be adjusted during the reception of a traffic report. The next time that a report is received, the volume will be at the previous setting. However, if the preset volume of the traffic reception is below that of the present source, the volume of the traffic reception will not decrease, and the preset volume of the traffic reception will be set to that of the source.
- If the radio band is already set to the FM band, even when listening to the cassette or the multi-play CD player, when the button [8] is pushed ("**TA**" [34] is shown on the display), the radio will be powered on, and traffic report waiting will begin. When a traffic report begins, the system will switch the sound source from cassette or the CD to the traffic report.
- While the button [8] is on, ("**TA**" [34] is shown on the display), and you are listening to either the cassette or multi-play CD player, should the traffic report station broadcast become weak, the radio will start BSA (Best TP or SK Station Auto Search) 10 seconds after "**TP**" [33] disappears from the diplay. The tuner will tune to the strongest TP or SK station, and will stand by for a traffic bulletin. BSA does not work when the AF function is selected, so turn off button [7] when you want to use BSA.
- About 30 seconds after "**TP**" [33] disappears from the display, which occurs if the signal from the TP or SK station becomes weak, an alarm sounds for 10 seconds to tell you to tune to another TP or SK station.

Tuning Functions on each RDS modes

Tuning Mode	AF Mode	TA Mode & AF plus TA Mode
Seek Tuning will stop to find,	RDS Stations	TP or SK Stations
BSM will select and memorize in presets,	RDS Stations	TP or SK Stations

Non-RDS station such as those using the Swedish MBS system may be tuned in as RDS station, but this is due to both systems using the same 57 kHz subcarrier frequency and is not a mulfunction of the unit.

Tuning Steps

The tuning step is normally 50 kHz during seek tuning on an FM band. This tuning step changes to 100 kHz during AF reception or traffic report reception. If desired, you may set a tuning step of 50 kHz for AF reception or traffic report reception by holding down the (+) side of the button [10] while turning the ignition key from OFF to ON.

- During manual tuning, the step does not change; it remains fixed at 50 kHz.
- The tuning step will return to 100kHz if the batteries supply is temporarily disconnected or the clear button is pressed.
- When the AF reception function is on, only those stations being broadcast at 100 kHz steps are subject to AF reception (CENELEC STANDARD).

MC-Service

Using the Tape Deck

Parts Identification

(Fig. 7)

[3] Open
[5] Front panel
[6] Display
[9] Source selector
[10] Fast forward, Rewind/Music search
[11] Direction change/Release
[13] Radio intercept/CD intercept
[14] Repeat
[15] Dolby B and C NR (KEH-M9500RDS)
[15] Dolby B NR (KEH-M8500RDS, KEH-M8000RDS)
[16] Blank skip
[19] Cassette slot
[20] Eject

(Fig. 10)

[45] Direction
[46] Metal
[47] Radio intercept/CD intercept
[48] Repeat
[49] Dolby B and C NR (KEH-M9500RDS)
[49] Dolby B NR (KEH-M8500RDS, KEH-M8000RDS)
[50] Blank skip
[51] Tape play

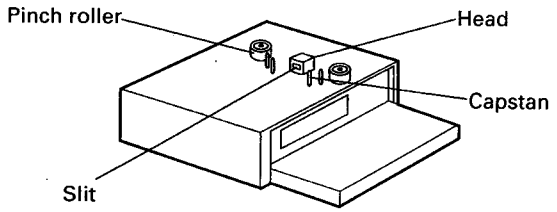
About cassette tapes

- Do not use tapes longer than C-90-type (90 min.) cassettes. Longer tapes can interfere with tape transport.
- Storing cassettes in areas directly exposed to sunlight or high temperatures can distort them and subsequently interfere with tape transport.

- Store unused tapes in a tape case where there is no danger of them becoming loose or being exposed to dust.

Cleaning the head

If the playback head becomes dirty, sound quality will suffer. Periodically (once or twice a month) clean the head with a cotton swab soaked with alcohol.



Listening to a tape

1. **Press button [3] to open the front panel.**
2. **Load a cassette in through the cassette slot [19]. The cassette will play.**

Tape play [51] and direction [45] appear.

- Do not take out the cassette while it is being loaded. If taken out forcibly, a cassette cannot be loaded later. If a cassette cannot be loaded, hold button [20] depressed and load the cassette again.

3. **Close the front panel and adjust volume and tone (see page 5).**
4. **To stop play halfway, press button [9] to switch the function off.**

To restart play, press button [9] some times until PLAY [51] appears on the display. The tape begins playing at the position where it stopped.

5. **To eject the cassette, press button [3] to open the front panel and press button [20].**

- Power is automatically turned off when the cassette tape has not been set within a few seconds. When this happens, remove the tape by pressing the button [20] because of a possible trouble with the tape.
- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.

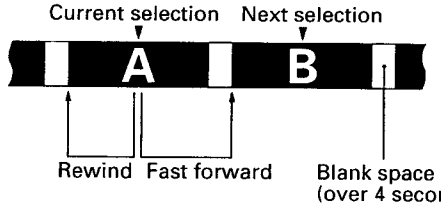
Changing Program

Press the button [11] to change the side of tape from A to B or vice versa.

Using Fast Forward and Rewind

1. To fast forward tape, press the (+) side of the button [10].
   (Display shows "**FF**".)
   To rewind tape, press the (–) side.
   (Display shows "**REW**".)
2. To release the fast forward or rewind function, press the button [11].

Using Music Search



1. To repeat the current selection (A), press the (–) side of the button [10] two consecutive times.
   (Display shows "**R-MS**".)
   To hear the following piece of music (B) rather than continue the current selection, press the (+) side of the button [10] two consecutive times.
   (Display shows "**F-MS**".)
   Pressing the button [10] three consecutive times makes the normal sequence of playing resume.
2. To release the music search function, press the button [11].

The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning.

- Unrecorded blank portion between selection is less than 4 seconds — the blank portion cannot be detected by the unit.
- Pauses in recorded conversations are longer than 4 seconds — the unit reads these as blanks between selections.
- Portions are recorded at very low volume for more than 4 seconds — the unit reads these as blanks between selections.

Dolby B and C NR

(KEH-M9500RDS)

Press button [15] to listen to a cassette recorded using the Dolby NR system. Each press of button [15] shifts the Dolby NR mode as follows:
Dolby B NR ("▣" [49] appears) — Dolby C NR ("▣▣" [49] appears) — Dolby NR off.

(KEH-M8500RDS, KEH-M8000RDS)

Press button [15] to listen to a cassette recorded using the Dolby NR system. Each press of button [15] shifts the Dolby NR mode as follows:
Dolby B NR ("▣" [49] appears) — Dolby NR off.

- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

Auto Tape Selector

When a cassette tape is inserted, the automatic tape selector determines the tape type, and switches between 70 µs and 120 µs equalization. When it is a metal or chrome tape, **"MTL"** [46] comes on. When it is a normal tape, nothing comes on.

Using the blank skip function

Automatically carriers out fast forward to the start of the next selection when there is a blank area of 10 seconds or more between selections.

1. Press button [16] and frame [50] will light. The unit will now carry out fast forward to the start of the next selection when there is a blank area of 10 seconds or more between selections.
2. To release the blank skip function, press button [16] again.

Using Radio Intercept and CD Intercept

CD intercept function activates only when connected with a separately sold multiplay CD player. (CDX-M30 etc.) The mode does not change to CD intercept mode (**"CD.INT"** and the frame at [47] turn on) if the multiplay CD player is not connected.
The mode changes as follows each time button [13] is pressed:
Radio intercept (**"R.INT"** and the frame at [47] turn on) — CD intercept (**"CD.INT"** and the frame at [47] turn on) — Release ([47] disappears)

Radio intercept

Lets you listen to the radio during fast forward or rewind.

1. Press button [13] to go to the radio intercept mode. The unit switches to the radio during fast forward or rewind.
2. To release radio intercept, press button [13] to erase the [47] display.

CD intercept

Lets you listen to the CD during fast forward or rewind

1. Press button [13] to go to the CD intercept mode. The unit switches to the CD during fast forward or rewind.
2. To release CD intercept, press button [13] to erase the [47] display.

Using the Music Repeat Function

Lets you listen to the same selection repeatedly.

1. When you want to listen to the same selection repeatedly, press button [14] and frame [48] will light.
2. To release the music repeat function, press button [14] again or press button [11].

ENGLISH

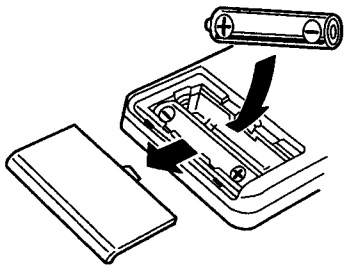
Using the Remote Control

(KEH-M9500RDS)
Use the remote controller that comes with this unit.

(KEH-M8500RDS)
This unit does not come with a remote controller. For remote control, please purchase the CD-R52, which is sold separately.

(KEH-M8000RDS)
This unit does not come with a remote controller and can not be operated with any remote controller.

Loading Batteries
1. Remove the battery compartment cover from the remote controller unit.
2. Load two batteries, whose type is UM-4, AAA or RO3, as applicable, that come with the unit into the remote controller unit, ensuring that their polarity (+/–) is correct.
3. Replace the battery compartment cover.



Precautions When Loading Batteries
Note the following precautions when loading batteries into the remote controller unit to avoid damage due to battery fluid leakage.
- *Always check carefully that you are loading batteries with their (+) and (–) poles facing in the proper directions.*
- *Never mix old and new batteries. Always replace batteries with two new ones.*
- *Some batteries may appear to be identical but have different voltage ratings. Never mix battery types.*
- *Some batteries can be recharged and some cannot. Be sure to carefully read the label for the batteries you use.*
- *To avoid damage to the remote controller caused by battery leakage, remove the batteries from the remote controller if you do not plan to use it for more than one month. If you find that fluid has leaked, thoroughly wipe out the battery compartment and load a set of new batteries.*

Precautions
- *Keep the remote controller unit in an area not exposed to long periods of direct sunlight.*
- *The remote controller unit may not operate properly if the transmitter of the remote controller unit is pointed towards the floor or the seat of the vehicle.*
- *Since the transmitter employs and infrared system, it may not operate properly while car stereo unit is exposed to direct sunlight. In such a case, block the sunlight from the sensor and then perform the desired operation.*
- *If the remote controller fails to operate unless it is brought close to the unit, it may indicate that battery power is low. Replace the batteries in the remote controller.*

(Fig. 8)
[21] Tape
If this button is pressed while there is a cassette tape inserted in the equipment, the unit will switch to tape-playing. Press it again to turn the unit OFF.
[22] Tuner
The tuner is selected. Pressing again turns off the power.
[23] Transmitter
[24] CD
Unit goes to CD play. Press again to turn OFF.
- This function only works when this unit is connected to a separately sold multi-Play CD player (such as the CDX-M30).

[26] Volume
Press the (+) side to increase volume and the (–) side to decrease volume.
[27] Attenuator
Press to reduce the volume to 1/10 of its current setting (The "**ATT**" display blinks.). Pressing again returns the volume to its original level.
- This function is available using the remote controller unit only.

[28] Learn Button
Takes on the same function as the button recorded with the learn function. Refer to the section "Learning Function" for details.

Operating Radio

[29] Band

Band changes.

[25] Preset Channel

Press to tune the frequencies assigned to the preset button memory. Pressing the (+) side tunes in the next high preset button number, while (–) tunes in the next lower preset button number. The preset number changes at high speed when you hold either side of this button down.

Operating Tape

[29] Program

Press this button to change the side of tape from A to B or vice versa.

[25] Fast Forward/Rewind

Press the (+) side for fast forward and the (–) to rewind the tape. Press this button twice to perform the music search operation, and a third time to return to normal playback.

Operating the CD Player

- This function only works when this unit is connected to a separately sold multi-play CD player (such as the CDX-M30).

[29] Disc Number Search

Used to specify the number a disc loaded in the magazine. Each press of this button sequentially advances the number.

[25] Track Number Search

Press to search for a selection (track number) on the current disc. Press the (+) side to increase the track number on the display, and the (–) side to reduce the track number. Holding down either side of this button changes the track number at high speed.

Learning Function

(KEH-M9500RDS, KEH-M8500RDS)

Parts Identification

(Fig. 7)

[1] Adjusting Audio

(Fig. 8)

[28] Learn Button

Records one button from the main unit on the remote control's learn button. This can be convenient when a button which is used often is recorded.

1. Holding down both the (+) and (–) sides of button [1] for at least 2 seconds displays **"LEARN"** for about 8 seconds.
2. Press the button on the main unit that you want to use on the remote control.
3. Press the learn button [28] on the remote controller unit. The main unit button recorded can now be used from the remote control.

- Store the button memory while **"LEARN"** is displayed. Once that **"LEARN"** display goes out, nothing can be stored into the button memory.

Using the Clock Display

(KEH-M9500RDS, KEH-M8500RDS)

Parts Identification

(Fig. 7)

[12] Clock
[17] 1 button: hour adjustment
[17] 2 button: minute adjustment

Displaying the Time

The clock is displayed when button [12] is pressed. Press button [12] again to switch off the clock display.

- The clock display can be used only when the main unit is in operation.
- When the clock is being displayed, pressing any other button will end the clock display. The clock will be displayed again about 25 seconds after the last button is pressed.

Adjusting the Time

Adjusting Hour

While holding down button [12], press button 1 of the buttons shown on [17], to adjust the hour setting. Each time button 1 is pressed, the hour advances by one hour. Holding down button 1 advances the hour at high speed.

Adjusting the Minutes

While holding down button [12], press button 2 of the buttons shown on [17] to adjust the minute setting. Each time button 2 is pressed, the minute advances by one minute. Holding down button 2 advances the minute at high speed.

ENGLISH

Using the Multi-Play CD Player

Precautions When Using the Multi-Play CD Control

- This model can be used as controller when an optionally available multi-play CD player (e.g., CDX-M30) is included in the system. Programmed play does not operate when used with the multi-play CD player CDX-M70 or CDX-M100.
- See pages 16 through 19 for details on operation procedures.
- The Owner's Manual for the multi-play CD player does not contain an explanation of the CD controls for this unit. Read this Owner's Manual for details on proper operation and keep it handy for later reference.
- Immediately after the multi-play CD player is connected to the system, it may not operate properly (i.e. the system will not enter the multi-play CD player mode when you press the source selector button). In this case, press the clear button of the main unit and the clear button of the multi-play CD player, and attempt operation again.

Listening to the Compact Disc

Parts Identification

(Fig. 7)

[6] Display
[9] Source Selector
[10] Track Number Search/Fast Forward, Reverse
[11] Program Clear
[13] Pause
[14] Mode
[15] ITP (Instant Track Program)
[16] Highlight Scan
[17] Disc Number Search

(Fig. 11)

[52] Manual
[53] Pause
[54] Music Repeat/Random Play/Disc Repeat
[55] ITP (Instant Track Program)
[56] Highlight Scan
[57] Play Time
[58] Track Number
[59] Disc Number

1. **Press button [9] to change the display to the Multi-Play CD Player mode and to begin disc play.**

Disc number [59], track number [58] and play time [57] will light. Each press of button [9] changes the mode as follows:
Multi-Play CD Player → Tape → Tuner → OFF

2. **Use the Disc Number Search function to select a disc.**

At the [17] button, press the disc number of the disc you wish to play. When the button is pressed, the selected disc number is displayed at [59] on the display and the playing starts.

- If pressing the [17] button has no effect (the pressed number is not displayed at [59]), check if there is a disc at that number.

3. **Adjust volume and tone. (See page 5.)**
4. **To stop disc play, press button [9].**

If you switch to the Multi-Play CD Player mode again, the normal play resumes from about where it stopped.

- If you stopped operating a Multi-Play CD Player CDX-M100 in the middle of music and then restarted, the player resumes playing from the very beginning of the selection with which you stopped.

Note:

- It takes about 30 seconds from setting the magazine in the multi-CD player till the start of CD playback. (During this time, "**READY**" blinks on the display.)
  This does not indicate a problem; it is just for verifying there a disc in the magazine.
- After you press a Button in Bank [17], it may take some time before play begins due to the time necessary to load and set the disc in the mechanism.
- The display counts down the number of seconds between tracks if the spacing is rather large (–02, –01).

Error Mode

Should an abnormality occur — for example, Multi-Play CD Player cannot be operated, or the music stops during CD playback — the main unit will indicate an error mode.
While it the unit is in error mode, a number will be displayed indicating the cause of the error, so please check the items listed below. If you cannot fix the problem after checking the cause of the error, please contact your dealer or your nearest Pioneer service center.

Note:
When using the Multi-Play CD Player, CDX-M100, CDX-M70, CDX-M50 and CDX-M40, an error will be displayed only in the form of "ERROR-00", without the number which indicated the cause of the error. When this display appears, please check items 11, 12, 14, or 30 listed below.

HEAT indicator

To prevent deterioration in the semi-conductor laser from overheating, playback of a CD will stop when the temperature surrounding the Multi-Play CD Player rise during play.
When this occurs, **"HEAT"** will be indicated on the display. Please wait until the temperature drops.

- This function refers to the Multi-Play CD Player CDX-M100. It does not refer to other Multi-Play CD Players.

ENGLISH

Display	Cause	Treatment
11, 12	Dirt or a scratch on the disc stops the laser beam from being able to focus.	Wipe the dirt off the disc. Exchange the disc if it is scratched.
	The disc has been inserted upside down.	Confirm that the disc has been inserted right side up.
14	The disc has been inserted upside down.	Confirm that the disc has been inserted right side up.
	An unrecorded one-time-recordable compact disc (CD-R) is being used.	When you use a CD-R, load one that has been recorded on.
30	Dirt or a scratch on the disc hinders the track number search function.	Wipe the dirt off the disc. Exchange the disc if it is scratched.
80	An empty magazine is loaded in the multi-play CD player.	Insert a disc in the magazine.
10, 12, 50, 60, 70, A0	Electrical or mechanical system fault.	Turn the car ignition switch OFF, then ON again, or change to other sources except CD playback , and then to CD playback again. If the error indication does not disappear, contact your dealer or your nearest Pioneer service station.

- When error numbers not mentioned above are indicated, refer to the owner's manual accompanying the multi-play CD player.

Track Number Search

The desired track on the disc currently being played can be selected by track (or song) number.

1. Ensure that "**MANU**" [52] is not indicated on the display. If so, turn it off by simultaneously pressing the (+) side and the (–) side of button [10].
2. Use the button [10] to select a track. Pressing the (+) side increases the track number [58], and pressing the (–) side decreases it. Holding the button down continuously increases or decreases the track number.

Using Highlight Scan

Highlight Scan is designed to enable you to conveniently scan all pieces of music contained in the disc by playing 10 seconds each at your designated point of time after the start of the music. The starting time of play is set at one minute in factory. Therefore, the Highlight Scan begins 1 minute after the start unless you designate it otherwise.

When you do not want to change the factory-set time:

- When used in conjunction with the old type Multi-Play CD Players [CDX-M70] or [CDX-M100], the place where playback starts in Highlight Scan is fixed as the start of each track. Also, it is not possible to adjust this time setting.

1. Pressing Button [16] turns on the frame of Highlight Scan [56].
2. The contained pieces of music will be played in sequence for 10 seconds each 1 minute after the beginning.
3. Press Button [16] again when your selected piece comes, and it will continue to play. At this point, the Highlight Scan discontinues to operate.

- The previous function automatically resumes when a piece of music with which Highlight Scan began returns.

Changing the Starting Time of Highlight Scan

When you want to set the starting time of the Highlight Scan to 30 seconds:

1. Indicate "**MANU**" [52] on the display by simultaneously pressing the (+) side and the (–) side of button [10].
2. Keep pressing either (+) or (–) side of Button [10] until the numerals reaches 30.
3. Pressing button [16] for 2 or more seconds, turns on the frame of Highlight Scan [56].
   Highlight Scan will begin 30 seconds after the start of the next piece of music.

- The starting time of Highlight Scan can be designated at ten or tens of seconds only. A tenth or tenths of seconds can be disregarded.
- If a piece of music ends before your designated point of time at which Highlight Scan starts, the scanning is performed for its beginning 10 seconds.
- If a piece of music lasts less than 10 seconds, so does the Highlight Scan.
- You may wish to change the starting time longer without suspending the function. You may do so, however, only to a relatively long-playing piece of music because, as a matter of course, the time cannot be set so as to come after the end of the music.

Using Disc Repeat, Music Repeat and Random Play

Each press of button [14] causes the mode to change as follows:

Music Repeat ("**RPT**" and the frame at [54] turn on) → Random Play ("**RDM**" and the frame at [54] turn on) → Normal.

If button [14] is pressed for 2 or more seconds, the mode changes to Disc Repeat ("**D.RPT**" and the frame at [54] turn on).

Music Repeat

1. To repeat the music you are listening to, select the repeat mode.
2. To cancel Music Repeat, press button [14] to turn off frame [54].

- When Disc Repeat or Music Repeat are not operational, the compact discs contained in the magazine will play sequentially from beginning to end, and then start from disc 1 again.

Random Play

1. To play music randomly, select the random play mode. Once the current track has been played, the microprocessor will randomly select the next and subsequent tracks.
2. To cancel random play, press button [14] to turn off frame [54].

- Since selections are played in random order, the same selection may be played twice in succession.
- When a Multi-Play CD Player CDX-M100 is used, random selection is made from a disc being played.

Disc Repeat

The Disc Repeat function causes the same disc to play repeatedly.

1. Press button [14] for 2 seconds or more while the desired disc is being played. The mode will change to Disc Repeat mode.
2. To cancel Disc Repeat, again, press button [14] for 2 seconds or more and turn off the frame at [54].

- Even during Disc Repeat, the mode will change each time button [14] is pressed, in the following order:
  Music Repeat → Random Play → Normal
- When Disc Repeat or Music Repeat are not operational, the compact discs contained in the magazine will play sequentially from beginning to end, and then start from disc 1 again.

Using Fast Forward and Reverse

1. Turn on "**MANU**" [52], by simultaneously pressing the (+) and the (–) sides of button [10].
2. Press the (+) side of button [10] for fast forward, and the (–) side for reverse.

- Sound is output during fast forward and reverse operations.

Pausing

1. Press button [13] to pause during disc playback ("**PAUSE**" and the frame at [53] appears).
2. Press button [13] again to release pause.

Note:

- When connected to a CDX-M50 some functions may not operate correctly. For example, when operating the pause function, the music will pause slightly ahead of the point at which the function was activated.
- The pause function does not operate at all if this unit is connected with the CDX-M70 or the CDX-M100.

Using Program Play

This function lets you program the play sequence of all of the tracks contained on the compact discs loaded in the magazine.

- The ITP function will not operate when connected to either the CDX-M70 or CDX-M100.
- Up to 32 selections can be programmed for a single magazine.
- Up to 16 different magazines (max. 32 selections per magazine) can be programmed individually. If you program more than 16 magazines, old programs are automatically replaced by new ones.
- Automatic Magazine Program Selection (AMPS) retrieves the right program from the memory automatically, as soon as a preprogrammed magazine is loaded. Preprogrammed magazines are identified using the CD in the tray 1 of the magazine. Therefore be sure that tray 1 contains a disc.

Programming

1. While a disc is playing, select the desired disc and track you want to program.
2. Press the ITP button [15] memorize the track being played.
   (Display shows "**P-01**" — "**P-32**".)
3. Procedures 1 and 2 above can be repeated until a maximum of 32 steps are programmed.

- If the 33rd step is selected, the "**FULL**" display will appear, indicating that no more selections can be programmed.
- When there are already a number of selections in the memory, the new selection will be added to the last step.

Playing back the program

1. If the ITP button [15] is pressed for about 2 seconds during normal playback, then program playback will start.
   (Frame [55] lights up and the program step number "**PP01**" — "**PP32**" is displayed.)
2. Press the ITP button [15] again to cancel program play.

- Pressing button [10] during programmed play makes it possible search for a specific step number from among the programmed selections.
- Program play returns to the first step in the programmed sequence when it reaches the end of the program.
- When playing a magazine that has no program recorded, "**EMPTY**" will be displayed for approximately 3 seconds.

Erasing the Program

It is possible to erase one or all selections of the program in the magazine being played.

To erase a single selection:

1. Press the (+) or (–) side of button [10] during programmed play, and search for the specific step you wish to erase.
2. Press button [11] for at least 2 seconds and the selection being played will be erased.

- After the particular track has been erased, the tracks in the next position move from down up one notch in the order from the previous position.

To erase the entire program:

While a disc is playing, hold down button [11] for at least 2 seconds. All the programs in the magazine being played will be erased.
(Display shows "**CLEAR**".)

ENGLISH

Specifications

General

Power Source ..... 14.4 V DC (10.8—15.6 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 7 A
Dimensions (chassis) ..... 180 (W) × 50 (H) × 155 (D) mm
(front face) ..... 188 (W) × 58 (H) × 18 (D) mm
Weight ..... 1.6 kg

Amplifier

Maximum power output ..... 30 W × 4 (EIAJ)
Continuous power output ..... 14 W × 4 (1% dist. at 1 kHz)
Load impedance ..... 4Ω (4—8Ω allowable)
Tone controls (bass) ..... ±12 dB (100 Hz)
(middle) ..... ±12 dB (1kHz)
(treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +12 dB (100 Hz), +7 dB (10 kHz)
(volume: –30 dB)
Nominal output level/
output impedance (pre out) 500 mV/1kΩ

Sub-woofer (KEH-M9500RDS, KEH-M8500RDS)

Crossover frequency ..... 50 Hz/80 Hz/120 Hz
Crossover slope ..... –12 dB/octave
Output gain ..... –21 — +9 dB

Tape player (KEH-M9500RDS)

Tape ..... Compact cassette tape (C-30—C-90)
Tape speed ..... 4.8 cm/sec.
Fast forward/rewind time ..... Approx. 100 sec. for C-60
Wow & Flutter ..... 0.09% (WRMS)
Frequency response ..... Metal: 30—19,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... Metal: Dolby C NR IN: 73 dB (IEC-A network)
Dolby B NR IN: 67 dB (IEC-A network)
Dolby NR OUT: 61 dB (IEC-A network)

Tape player (KEH-M8500RDS, KEH-M8000RDS)

Tape ..... Compact cassette tape (C-30—C-90)
Tape speed ..... 4.8 cm/sec.
Fast forward/rewind time ..... Approx. 100 sec. for C-60
Wow & Flutter ..... 0.09% (WRMS)
Frequency response ..... Metal: 30—19,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... Metal: Dolby B NR IN: 67 dB (IEC-A network)
Dolby NR OUT: 61 dB (IEC-A network)

FM-Tuner

Frequency range ..... 87.5—108 MHz
Usable sensitivity ..... 8 dBf (0.7μV/75Ω, mono)
50 dB quieting sensitivity ..... 13 dBf (1.2μV/75Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3% (at 65dBf, 1kHz, stereo)
Frequency response ..... 30—15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW-Tuner

Frequency range ..... 531—1,602 kHz
Usable sensitivity ..... 18μV (25 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW-Tuner

Frequency range ..... 153—281 kHz
Usable sensitivity ..... 30μV (30 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:

Specifications and the design are subject to possible modification without notice due to improvements.

MC-Service